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WILTON L. HALVERSON, M.D., Director



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GUY P. JONES
Editor

INFANT MORTALITY IN SAN FRANCISCO

J. C. GEIGER, M.D., Director of Public Health and EMMETT E. SAPPINGTON, Assistant Director of Public Health

Following the completion of statistical records for 1942 certain facts indicated trends in San Francisco for 1943 of more than usual significance. Among other points the 1942 record showed a 28 per cent increase in births over the previous year and a 47 per cent increase in total infant deaths over 1941. The year 1942 had a 15 per cent increase in the infant mortality rate (rate for 1941, 27.4; rate for 1942, 31.5).

On the basis of the 1942 record it was suggested that the number of births would continue to increase and perhaps would carry with it a rise in the total infant deaths.

Analysis of our records for the first quarter of 1943 shows that 150 infant deaths were recorded, and of these, 78 or 52 per cent were males and 72 or 48 per cent were females. As to color, 144 were White, 2 were Negro and 4 were Chinese. Age distribution is shown in the following tabulation:

AGE DISTRIBUTION (Tabulation I)

	Number	Per cent
Under 1 day	43	28.7
1-6 days	23	15.3
7-13 days	9	6.0
14-20 days	18	12.0
21-30 days	12	8.0
1-2 mos.	22	14.7
3-5 mos.	15	10.0
6-11 mos.	8	5.3
1st week of life—		
44 per cent		
Total neonatal deaths		
105-70 per cent		

During the first three months of 1943, 3,496 births were registered. On the basis of the 150 infant deaths an infant mortality rate of 42.9 is obtained.

Prematurity as a primary cause was shown for 45 of the infant deaths. This represents 30 per cent

of infant deaths for the first three months of 1943.

In the following tabulation premature births and deaths from prematurity showing months of gestation are presented:

BIRTHS AND DEATHS (Period of Gestation) (Tabulation II)

	Births	Per cent in group	Deaths	Per cent in group
5 mos.	7	3.2	7	15.5
6 mos.	18	8.3	15	33.3
7 mos.	48	22.0	17	37.8
8 mos.	145	66.5	6	13.3

It is noteworthy that from the table 100 per cent of the babies of five months gestation died, 83½ per cent of six months gestation expired, 35 per cent of the seven months group expired and only 4 per cent of eight months gestation expired. This demonstrates definitely the importance of using all means possible to eliminate all known causes which assist in bringing about prematurity. Good prenatal care for the expectant mother is the outstanding weapon which may serve to combat the production of a high rate for prematurity in the new-born.

A tabulation showing the cause of death of the 150 infants as taken from the death certificates is shown in the following tabulation:

(Tabulation III)

Causes of death	Total	Neonatal	1-11 mos.	Per cent of total infant deaths	Per cent in neonatal group
Prematurity	45	45	0	30.0	42.9
Enteritis	25	18	7	16.7	17.1
Congenital malformations	21	15	6	14.0	14.3
Respiratory	14	2	12	9.3	1.9
Atelectasis	7	6	1	4.7	5.7
Injuries at birth	7	7	0	4.7	6.7
Other dis. early infancy	7	7	0	4.7	6.7
Accid. deaths	2	0	2	1.3	—
Coroner's cases	5	2	3	3.3	1.9
All other causes	17	3	14	11.3	2.8
Total	150	105	45		

The tabulation noted above brings attention to the neonatal period in that 105 or 70 per cent of the infant deaths occurred during the first thirty days of life. It is also significant that 18 or 72 per cent of the enteritis deaths occurred during the neonatal period.

In Tabulation IV we have presented those cases where birth and death places were the same hospital and those in which other birthplaces were shown:

Hospitals	Death and birthplace the same	Other birthplace	Total	Per cent of total infant deaths
A	23		23	15.3
B	16	7	23	15.3
C	8	5	13	8.7
D	5	2	7	4.7
E	2	3	5	3.3
F		1	1	0.7
G	1		1	0.7
H	3		3	2.0
I	3	0	3	2.0
J	5		5	3.3
K	12	6	18	12.0
L	1	1	2	1.3
M	9	1	10	6.7
N	8		8	5.3
O	4	1	5	3.3
P	7	2	9	6.0
En route Hospital		6	6	4.0
Home		8	8	5.3

Seven deaths were definitely reported as epidemic diarrhea of the newborn. Of these seven, 4 died at Hospital A, 2 at Hospital B, one at Hospital C. Eight of the cases coded as deaths from enteritis showed prematurity as a joint cause.

Of the total enteritis deaths 12 or 48 per cent occurred at Hospital A, 6 or 24 per cent at Hospital B, 4 or 16 per cent at Hospital C, and one or 4 per cent each at Hospitals D, E, and F.

Special interest centers at this time on deaths from enteritis. In this three months' period 25 deaths have occurred from this cause variously reported as infectious diarrhea, epidemic diarrhea of the newborn, enteritis, diarrhea, infant diarrhea, enterocolitis and gastroenteritis. Of the total, 15 or 60 per cent, were males, 10 or 40 per cent, females.

From the foregoing table it is noted that 77 or 51 per cent of total infant deaths occurred in four hospitals. 43 deaths or 29 per cent were cases that entered hospitals other than those in which the babies had been born or received early infant care. Of the 43 cases showing other birthplace 19 were born in areas outside San Francisco.

Epidemic diarrhea of the newborn is not new, but when it appears creates havoc in infant mortality rates and grave concern in every hospital where it strikes. The etiology is not determined at the present time. A severe intestinal toxemia is present, producing a high case fatality rate. The incubation period is believed to be from two to six days,

which may be followed by a prodromal period of several days. In the period 1934-1937, 20 severe outbreaks occurred in 19 hospitals in New York City. There were 5,682 babies exposed, of which 750 developed the disease, resulting in 356 deaths, a case fatality of 47.5 per cent. It is significant that the disease occurs in both exclusively breast fed babies and those on artificial feedings. In the present epidemic in San Francisco there were 135 cases of enteritis in babies under one year of age during the first two and one-half months of 1943, and a resulting 25 deaths during the months of January, February and March. The most effective measure in combating this disease when it is recognized in an institution is to close the nursery to new admissions. The nursery should be cleaned completely and thoroughly. New cases should not be admitted until the epidemic is well under control, and then different personnel should handle the new cases. The age at the time of death of the 25 enteritis deaths is shown in the following table:

7-13 days	1
14-20 days	10
21-30 days	7
1 month and over	7

It is evident from this tabulation that these babies were probably exposed during the first two weeks of life and developed the enteritis from one to two weeks later. Our records show that 99 per cent of the babies in San Francisco are born in hospitals. In surveying the 135 cases of enteritis it was noted that many of the cases did not show any active symptoms until after mother and baby had left the hospital. Due to the fact that hospital facilities are at present taxed to capacity, duration of stay for mothers and babies is limited, in most hospitals in San Francisco, to periods of seven to nine days.

Comparable figures for the five years previous are set up in the following tabulations:

Jan. Feb. Mar.	Total infant deaths	Total births	Infant mortality rate
1938	76	2,036	37.3
1939	63	2,046	30.8
1940	63	1,907	33.0
1941	71	2,037	34.9
1942	84	2,497	33.6
1943	150	3,496	42.9

Jan. Feb. Mar.	Total	Under 1 day	Per cent in group	Neonatal	Per cent in group
1938	76	33	43.4	57	75.
1939	63	19	30.2	41	65.
1940	63	24	38.1	45	71.4
1941	71	32	45.1	50	70.4
1942	84	39	46.4	67	79.8
1943	150	44	29.3	105	70.0

PRINCIPAL CAUSES OF DEATH—Percentage Distribution (Tabulation VII)

Causes	1938		Jan. Feb. Mar. 1939		1940	
	Per cent of total infant deaths	Per cent of neonatal deaths	Per cent of total infant deaths	Per cent of neonatal deaths	Per cent of total infant deaths	Per cent of neonatal deaths
Prematurity	51.3	66.6	44.4	65.9	33.3	46.7
Congenital malformations	11.8	12.3	14.3	9.8	20.6	20.0
Respiratory infections	9.2	1.8	19.0	4.9	3.2	---
Atelectasis	2.6	3.5	1.6	2.4	12.7	15.6
Injuries at birth	2.6	3.5	3.2	4.9	6.3	8.9
Other dis. early infancy	3.9	5.3	1.6	2.4	4.8	4.4
Enteritis	3.9	3.5	6.3	7.3	3.2	2.2
Accidental deaths	2.6	---	---	---	3.2	2.2
Coroner's cases	---	---	---	---	---	---
All other causes	11.8	3.5	9.5	2.4	12.7	---

Causes	1941		1942		1943	
	Per cent of total infant deaths	Per cent of neonatal deaths	Per cent of total infant deaths	Per cent of neonatal deaths	Per cent of total infant deaths	Per cent of neonatal deaths
Prematurity	54.9	76.0	54.7	67.2	30.0	42.9
Congenital malformations	11.3	8.0	15.5	13.4	14.0	14.3
Respiratory infections	9.8	2.0	2.4	---	9.3	1.9
Atelectasis	2.8	4.0	1.2	1.5	4.7	5.7
Injuries at birth	---	---	3.6	4.5	4.7	6.7
Other dis. early infancy	5.6	6.0	4.8	5.9	4.7	6.7
Enteritis	1.4	2.0	---	---	16.7	17.1
Accidental deaths	2.8	---	5.9	3.0	1.3	---
Coroner's cases	---	---	---	---	3.3	1.9
All other causes	11.3	2.0	11.9	4.5	11.3	2.8

Analysis of the foregoing tabulation indicates that little variation occurs in the percentage distribution of these principal causes of death, except in 1943 when enteritis rises to about 17 per cent of the total infant deaths, over an average for the preceding five years of 3 per cent. This would suggest that had there been no epidemic of enteritis in 1943, infant mortality would have remained at normal expectancy.

Another point of interest is the distribution of respiratory infections. These apparently are of little significance in the neonatal group, but assume greater importance in the older group, when the infant is removed from hospital supervision.

Conclusions:

- (1) During the first quarter of 1943, 150 deaths of infants were registered.
- (2) In the same period births reached a total of 3,496, producing an infant mortality rate of 42.9.
- (3) A sharply increased mortality rate, accompanying an increased birth registration, prompted the foregoing analysis, from which one outstanding conclusion may be drawn.
- (4) With no increase in enteritis deaths, the relative importance of major causes of infant mortality would have remained essentially the same as in the previous five years.

ENCEPHALITIS INVESTIGATED

Cases of encephalitis in several counties were investigated during April. The ages of the patients ranged from 2½ months to 49 years. Laboratory reports indicated that one case was of the severe St. Louis type of encephalitis.

APRIL HEALTH CONDITIONS GOOD

General health conditions during April were better throughout California than during the corresponding month of 1942. Communicable diseases, such as chickenpox, measles, influenza, mumps and whooping cough, are much less prevalent now than during the same month of last year. Among the more severe epidemic diseases that are more prevalent now are epidemic poliomyelitis, meningitis, meningococcus, epidemic diarrhea of the newborn and diphtheria. The increase in epidemic poliomyelitis is out of proportion to normal incidence for this season of the year, which indicates that a conspicuous increase may occur during late summer and fall. The incidence of diphtheria is higher than during the past three years. The disease is now appearing among higher age groups than is usual.

BOTULISM FROM HOME CANNED FOODS

During April three cases of botulism in individuals who ate home canned figs were investigated by the department. One of these cases proved fatal. Another group of two cases, due to home canned mushrooms packed in olive oil, was investigated. One of these cases also proved fatal. Warnings relative to the use of improperly home canned foods have been sent broadcast by the department. These warnings should be given serious attention, particularly this year, when shortages in commercially canned products will bring an unusual increase in the quantities of foods canned in the home. A safe rule is to boil all home canned vegetables for at least 15 minutes before eating.

SMALLPOX MOVING WESTWARD

Smallpox is being reported in increasing numbers in eastern States and apparently is moving westward. Every health officer in California is watching for the disease to appear in this State. At the request of various local health officers, a number of suspected cases were investigated by the department last month. All cases investigated proved not to be smallpox. The alertness of health officers in watching for appearances of cases of smallpox is highly commendable.

CLINIC ACTIVITIES FOR CRIPPLED CHILDREN

The State Department of Public Health conducted diagnostic clinics for crippled children during April in Vallejo, Susanville, El Centro, Martinez, Madera, Mariposa and San Bernardino. Cardiac clinics were conducted in Pittsburg, Oakland, Richmond and Fairfield.

MORBIDITY*

Complete Reports for Certain Diseases Recorded for Week
Ending May 29, 1943

CIVILIAN CASES

Chickenpox

1037 cases from the following counties: Alameda 139, Butte 3, Colusa 1, Contra Costa 38, Fresno 18, Kern 71, Los Angeles 288, Madera 3, Marin 11, Merced 2, Monterey 2, Napa 2, Orange 39, Riverside 4, Sacramento 26, San Bernardino 7, San Diego 80, San Francisco 141, San Joaquin 13, San Luis Obispo 4, San Mateo 35, Santa Barbara 4, Santa Clara 43, Santa Cruz 17, Shasta 1, Solano 7, Sonoma 22, Tulare 3, Tuolumne 1, Ventura 10, Yolo 2.

German Measles

1185 cases from the following counties: Alameda 141, Contra Costa 43, Fresno 35, Kern 19, Los Angeles 438, Marin 16, Monterey 3, Orange 41, Riverside 6, Sacramento 22, San Bernardino 80, San Diego 79, San Francisco 101, San Joaquin 31, San Luis Obispo 1, San Mateo 8, Santa Barbara 10, Santa Clara 50, Santa Cruz 1, Sonoma 30, Tehama 1, Ventura 28, Yuba 1.

Measles

900 cases from the following counties: Alameda 125, Butte 2, Calaveras 3, Contra Costa 15, Fresno 6, Kern 47, Los Angeles 382, Marin 4, Mendocino 5, Merced 1, Monterey 34, Napa 2, Orange 10, Riverside 4, Sacramento 12, San Bernardino 10, San Diego 79, San Francisco 58, San Joaquin 5, San Luis Obispo 1, San Mateo 20, Santa Barbara 7, Santa Clara 15, Santa Cruz 1, Shasta 2, Solano 29, Sonoma 13, Sutter 2, Tulare 3, Tuolumne 2, Ventura 1.

Mumps

669 cases from the following counties: Alameda 51, Contra Costa 11, Fresno 11, Kern 29, Los Angeles 208, Marin 2, Merced 1, Monterey 2, Orange 56, Riverside 1, Sacramento 17, San Bernardino 9, San Diego 85, San Francisco 71, San Joaquin 42, San Luis Obispo 6, Santa Clara 16, Santa Barbara 5, Santa Cruz 20, Solano 22, Tulare 1, Yolo 2, Yuba 1.

Scarlet Fever

152 cases from the following counties: Alameda 18, Contra Costa 5, Fresno 1, Los Angeles 59, Marin 2, Monterey 1, Orange 3, Placer 1, Sacramento 1, San Bernardino 2, San Diego 11, San Francisco 19, San Joaquin 2, San Luis Obispo 4, San Mateo 3, Santa Clara 9, Santa Cruz 1, Solano 3, Sonoma 3, Tulare 1, Tuolumne 1, Ventura 1, Yuba 1.

Whooping Cough

492 cases from the following counties: Alameda 29, Contra Costa 2, Fresno 13, Kern 32, Los Angeles 171, Madera 5, Marin 1, Merced 5, Monterey 1, Orange 8, Placer 6, Riverside 6, Sacramento 14, San Bernardino 12, San Diego 32, San Francisco 32, San Joaquin 51, San Luis Obispo 2, San Mateo 9, Santa Barbara 7, Santa Clara 10, Santa Cruz 1, Shasta 1, Solano 9, Sonoma 11, Sutter 3, Tulare 2, Ventura 11, Yolo 1, Yuba 5.

Diphtheria

18 cases from the following counties: Alameda 2, Los Angeles 1, Orange 3, Sacramento 5, San Bernardino 3, San Joaquin 2, Santa Cruz 1, Yuba 1.

Epilepsy

56 cases from the following counties: Alameda 2, Los Angeles 43, Mono 1, Sacramento 2, San Bernardino 3, San Francisco 3, Sonoma 2.

Diarrhea of Newborn (Epidemic)

2 cases from the following counties: Kern 1, San Francisco 1.

Dysentery (Bacillary)

10 cases from the following counties: Los Angeles 4, Santa Clara 2, Sonoma 4.

Food Poisoning

2 cases from Los Angeles County.

Influenza (Epidemic)

33 cases reported in the State.

Malaria

14 cases from the following counties: Lake 1, Sacramento 1, San Diego 1, Tulare 3, Yolo 3, not allocated 5.

Meningitis (Meningococcic)

23 cases from the following counties: Alameda 6, Los Angeles 4, Orange 1, Sacramento 3, San Diego 1, San Francisco 7, Solano 1.

Paratyphoid Fever

One case from Los Angeles County.

* Data regarding the other reportable diseases not listed herein may be obtained upon request.

Pneumonia (Infectious)

46 cases reported in the State.

Poliomyelitis (Acute Anterior)

13 cases from the following counties: Alameda 1, Los Angeles 5, San Bernardino 1, San Diego 1, San Francisco 2, San Joaquin 1, Santa Barbara 1, Ventura 1.

Rabies (Animal)

18 cases from the following counties: Kern 2, Los Angeles 16.

Relapsing Fever

One case, not allocated.

Rheumatic Fever (Acute)

8 cases from the following counties: Alameda 2, Los Angeles 4, San Francisco 1, Yolo 1.

Typhoid Fever

3 cases from the following counties: Calaveras 2, San Francisco 1.

Undulant Fever

5 cases from the following counties: Los Angeles 1, Madera 1, Orange 1, Sutter 1, Tehama 1.

Gonorrhea

242 cases reported in the State.

Syphilis

510 cases reported in the State.

SYPHILIS IN NEGROES

In making an analysis of reports of syphilis in negroes and the white race, the department has determined that of the total reported cases of primary and secondary syphilis among negroes which were reported during the first three months of 1943, 54.2 per cent were reported from military sources. During the same period only 11.7 per cent of primary and secondary cases among whites were reported by the military. It is believed that a large number of cases among colored soldiers and sailors were contracted in other States. Military authorities are much more successful in finding early cases than are the civilian agencies. Nearly 100 per cent of syphilis reported from military sources are in the primary or secondary stage. While many negro military detachments have moved into California during the past year, it is probable that there has been a larger migration of negro civilians with a correspondingly high rate of syphilis infection. Local health officers have been advised to intensify their case finding activities among colored populations. If possible, the State Department of Public Health intends to continue serological surveys and a health educational program among industrial groups in which there is a high proportion of negroes.

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